

16 July 1964

TENTATIVE PROCEDURE FOR SELECTION OF DESIGN CONTRACTOR

1. Candidates for selection as Design Contractor should be fully briefed on the proposed program and then requested to provide information from which the selection can be made.

2. The program description provided to the potential contractors should include a definition of the problem, an exposition of the technical approach followed thus far, and a clear description of the proposed management structure.

3. The requested information should be such as to ascertain that a contractor has a clear understanding of the problem, that he has an approach to the problem indicating a grasp of all that must be done, i. e., schedule problems, key problem areas, the efforts which must be immediately started in terms of data collection, laboratory experiment, etc., and that he has available and is willing to assign to this project the specific people and facilities required to accomplish the desired work.

4. A tentative breakdown of the items on which contractor input would be desirable include:

I Technical Approach

II Technical Ability

III Project Management (including facilities, lab, and manufacturing support as may be required, and field support)

IV QA, QC and Reliability Program

V Past Experience

VI Past Performance

VII Compatibility with Cover

VIII Location

5. Key technical areas to be considered in I and II should include:

a. Systems capability, both in terms of synthesis and analysis capability of the sub-systems required for both a space craft and ground components as well as the ability to integrate these analyses and trade-offs in terms of the total systems.

b. Capability in the space aspects of the program such as trajectory analysis and selection, stabilization, control, environment, pre-launch test and evaluation techniques, etc.

c. Strong electronics capability in both space and ground design areas including transmitters, receivers, telemetry, command/control techniques, antennas, signal processing (with special attention to RFI), computer techniques, power, test and check-out.

6. A Proposal Checklist which may serve as a guide for evaluating Technical Approach, Technical Ability, Project Management, QA, QC, and Reliability is attached.

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PROPOSAL CHECKLIST FOR TECHNICAL APPROACH, TECHNICAL ABILITY, PROTECT MANAGEMENT, AND QA/QC/RELIABILITY

I TECHNICAL APPROACH

This section should provide an analysis of the problem, a discussion of the operational environment and an accurate and clear technical description of the proposed system and hardware, including drawings or sketches of the proposed configuration. The following should be considered:

1. Is there a clear concise statement of the technical requirements with which the design contractor must deal.
2. Is the technical problem as seen by the Design Contractor clearly delineated? - not simply "parroted."
3. Does the proposal convincingly show a depth of understanding of the problem?
4. Is there a brief discussion of alternate solutions which should be explored?
5. Is there a discussion of technical approaches to be explored and why the contractor's approach may be expected to yield the desired results?
6. Have unrealistic and unreasonable performance requirements been identified and alternatives suggested?
7. In event of deviations or alternates, is the detailed logic for these recommendations given?
8. In the event that certain problem objectives are to some extent incompatible with other problem goals (e. g. simplicity vs accuracy) does the Design Contractor indicate how this may be resolved?
9. Have excessive costs or time delays required to meet certain specific requirements been clearly pointed out?

10. Is there a description of novel ideas or technical approaches?
11. Is there a statement of major technical problems which must be solved with an indication as to the amount of effort budgeted to each?
12. Is the relation of sub units to the broader over-all system with which it will operate understood?
13. Does the approach consider the viewpoints of logistics, long-range maintenance, retrofitting, etc.?
14. Is consideration given to early identification of new components that may be required?

II TECHNICAL ABILITY

This section should clearly demonstrate the overall technical competence of the Design Contractor to successfully perform the required role.

1. Does the proposal provide convincing assurance of specific technical competence for this project?
2. Does the proposal give specific examples of similar projects successfully completed?
3. Is information provided as to the relation of the proposed hardware to existing or previous programs which the company has done for other customers, indicating the customer, project and funds already spent?
4. Do the biographies relate specific experience of personnel to the specific needs of this project?
5. Is the availability of specific people clearly detailed -- in terms of man-hours for both full-time and part-time people?
6. Does the proposal show a depth of qualified personnel?
7. Are areas of technical weakness identified and does the proposal show how this will be compensated for - for example by sub-contracting or the use of consultants?
8. Does the proposal clearly indicate that there is adequate technical space and facilities? Both general and special to perform work efficiently and on schedule?

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9. Does the proposal outline the availability of the facilities, Government-owned, owned, or leased, necessary for the specific project, for research, development, production and testing?
10. Are special technical facilities (such as dust-free laboratories, temperature controlled rooms, data processing equipment, special laboratory equipment) required by the project clearly spelled out?
11. Is it clearly indicated that all required facilities will be available when required for this project?
12. Where Government-furnished equipment is required, are these needs clearly justified?
13. Is a facility plan provided showing layout, tests, square footage, etc. ?
14. Where tie-ins with subcontractors are proposed, is specific evidence given of the subs' commitment to make technical people and facilities available when required?

III PROJECT MANAGEMENT

The proposal should show the contractor's Method of Management. It must outline the overall management concepts employed by the contractor and the specific type of management that will be provided for the project.

1. Does the proposal clearly demonstrate an understanding of the Agency's concern with the management of this project?
2. Are details provided on experience, facilities and personnel?
3. Does the proposal demonstrate that top-level management will continue a high level of interest and assume responsibility for successful accomplishment of the program?
4. Does the proposal provide convincing evidence that the contractor is properly oriented and organizationally structured to meet the specific management needs of this project? Especially in terms of providing the requisite functions of communication (internal and external) and of integration of all project phases and pieces, including design control.

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5. Is it clear that management has honestly examined its own areas of competence and incompetence?
6. Are details provided on management objectives, policies, participation, and reliability concepts?
7. Does the proposal show the capabilities of the management to handle a project of the size contemplated?
8. Is evidence given that top-level management has full control of its organization?
9. Does the proposal show how the interest of the contractor in this specific project ties in with the contractor's long-range plans as well as with past experience?
10. Does the proposal outline the type of management to be provided for the project, viz; whether a special management group will be formed or whether there will be contract-wide participation.
11. Does the proposal show the position of the program manager or group in the overall contract organization and the limits of authority and responsibility?
12. If no overall group is to be formed, does the proposal show the method of operation within the overall contract structure?
13. Does the proposal delineate the requisite numbers (neither over-or-under-managed) of the right types of management people?
14. Where organizational charts are presented, is it clearly shown how the project management will operate effectively on a day-to-day basis?
15. Is information furnished as to the type, frequency, and effectiveness of management controls and methods for corrective action?
16. Do the manpower buildup charts clearly explain the methods of manpower acquisition, particularly skilled manpower requirements?
17. Is a total manpower plan and individual plans for engineering, quality control, and other key areas furnished?

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18. Is information furnished showing how the present project will phase in with current and future business?
19. Does the proposal adequately cover all aspects of support required for the stated program? The following items should be considered; maintenance, engineering, technical training, technical data, installation support, sustaining engineering and product improvement, field representation, provisioning of unit spares and maintenance and operating parts, test, and other ground support equipment.
20. Does the proposal highlight the magnitude and scope of the company's field service and support capability?
21. Are recommended support aspects accurately described and delineated?
22. Does the proposal provide specific examples of accomplishment in the field service and support area?
23. Does the proposal describe the type of support which will be required from the agency?

IV

QUALITY ASSURANCE, QUALITY CONTROL AND RELIABILITY

The term "Quality Assurance" covers all the actions necessary to adequately determine that product requirements are met. "Quality Control" is the system and management function by which the Contractor ascertains and controls the quality of supplies or services. "Reliability" is the ability of item to function without failure. The proposal should carefully delineate the contractor's programs in these areas.

1. Does the proposal describe the contractor's quality control plan including organization, policies, facilities, operational system, technical capabilities, and records system and how they will be applied to the project?
2. Does the proposal show how Agency reliability requirements can be achieved by the contractor's concept and approach, including a specific program for meeting or surpassing these requirements?
3. Is it clearly shown how the reliability organization and project responsibility fit into the proposed program?

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4. Are reliability monitoring points (breadboard, experimental, development, service test, prototype and production) clearly delineated so that Agency surveillance may be effectively exercised?
5. Does the proposal show an understanding of reliability prediction techniques and spell out in detail how predicted goals will be met?
6. Is creative ingenuity reflected in the proposal by pointing out reliability approaches to particular development phases?
7. Does the proposal discuss the contractor's facilities and measuring equipment?